

**OCCUPATIONAL SAFETY
AND HEALTH STANDARDS BOARD**

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**FINAL STATEMENT OF REASONS****CALIFORNIA CODE OF REGULATIONS**

TITLE 8: Chapter 4, Subchapter 5, Article 3,
Section 2320.2 of the Low Voltage Electrical Safety Orders

**Energized Equipment or Systems with respect to the Use of
Personal Protective Equipment and Safeguards**

There are no modifications to the information contained in the Initial Statement of Reasons.

SUMMARY AND RESPONSE TO ORAL AND WRITTEN COMMENTS**I. Written Comments**

Mr. Charles Creech, Manager of Safety and Security, C & H Sugar Company by letter dated November 5, 2001.

Comment:

Mr. Creech expressed concerns with the proposed amendments to Section 2320.2(a)(3)(A) with respect to the use of rubber insulating gloves for electrical protection. Specifically, Mr. Creech noted that the only rubber insulating gloves they have been able to find that meet the standard's specification are so awkward and bulky to wear that electricians state they cannot be worn when performing small electrical testing or calibration on energized instrumentation equipment.

Mr. Creech suggested that the Standards Board staff inspect some of the gloves that would be required by the amendments and that staff would find them not effective for lower voltages specified in the standard. Mr. Creech opined that insulated tools are sufficient protection for lower voltage equipment.

Response:

Board staff contacted Mr. Creech by telephone to discuss his concerns. Board staff pointed out to Mr. Creech that proposed subsection (a)(3) provides that approved insulated gloves or insulated tools are both acceptable means of protection at lower voltages and that subsection (a)(4) of the proposal requires approved insulated gloves to be worn for voltages in excess of 250 volts to ground. Staff further discussed the types of approved rubber insulated gloves available such as a class 00 or class 0 gloves that provide the required protection and an adequate level of

dexterity. Board staff believes that the requirements and provisions in the proposal address the concerns expressed by Mr. Creech.

Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment. The Board thanks Mr. Creech for his comments and participation in the Board's rulemaking process.

Mr. John C. Vocke, Attorney – OSHA Compliance, Pacific Gas and Electric Company (PG&E) by letter dated December 12, 2001.

Comment No. 1:

Mr. Vocke stated that PG&E is an investor-owned utility employing approximately 21,000 men and women to provide gas and electric service to more than 13 million people in Northern California. PG&E expressed that it had a concern with the cost estimates of the proposed action and believes that there will be costs to State agencies and businesses in complying with the amended Low Voltage Electrical Safety Orders (LVESO).

Mr. Vocke further states that prior to the February 15, 2001 amendment to the LVESO¹, lineman's or electrician's leather gloves were generally considered "suitable protective equipment" for work on electrical systems energized below 600 volts. The Board's rulemaking action earlier this year [2001] mandated approved insulated gloves for work on systems energized above 250 volts. Mr. Vocke notes that as presently proposed, linemen and electrician's leather gloves will not be permitted for use on electrical systems energized above 50 volts. Thus, employers and state agencies must provide ASTM-approved gloves or insulated tools for virtually all electrical work performed in California. PG&E estimates the cost of approved insulated gloves for use between 50 and 250 volts to be \$28.00 a pair.

Response:

Mr. Vocke stated that employers and state agencies must provide ASTM-approved gloves or insulated tools for virtually all electrical work performed in California. However, much of the work on electrical systems is performed with the preferred method of deenergizing electrical systems before work is performed. The provisions of Section 2320.2 only apply when responsible supervision has determined the work is to be performed on exposed energized parts of equipment or systems.

Further, Board staff does not agree that the use of leather gloves or leather protectors used without rubber insulating gloves is considered "suitable protective equipment" for use on energized systems or conductors below 600 volts. The term "suitable" is defined in the LVESO Section 2300 and means "Capable of performing with safety the particular function specified in these Orders." Board staff is not aware of any nationally recognized electrical authority or national consensus standard supporting the concept that leather gloves alone are suitable

¹ See history note No. 3 to Section 2320.2 that shows amendments to subsection (a)(3), (4), and newly designated subsection (a)(6) operative on February 15, 2001.

protection for work on energized systems. As an example, the ASTM F 696 – 97 “Standard Specification for Leather Protectors for Rubber Insulating Gloves and Mittens” in Section 1.2 prohibits the use of leather protectors/leather gloves (used without insulated rubber gloves) for electrical protection. When work is performed on energized systems, the existing regulations in Section 2320.2(a)(3) require that “suitable” protection has been provided to the employee. If gloves are provided for personal protective equipment when working on energized systems or conductors, they need to be rubber insulated gloves. The proposed regulation does not impose new requirements but clarifies rubber insulated gloves must meet the provisions of the ASTM D 120-95 standard.

Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment No. 2:

Mr. Vocke stated that to accommodate the development of other insulated protective equipment beyond approved gloves and tools, PG&E recommends that the federal regulation, 29 CFR 1910.269(l)(2)(1) [sic 1910.269(l)(2)(i)] be paraphrased or modified as follows in proposed Section 2320.2(a)(3):

“The employee is insulated from the energized part by suitable protective equipment and safeguards (provision and use of approved insulated gloves or approved insulated tools are considered to be insulation of the employee only with regard to the energized part upon which work is being performed).”

Response:

The use of equipment and safeguards (i.e., approved insulated gloves or insulated tools) are nationally recognized and accepted methods for providing employee protection when working on energized systems or conductors at low voltages. The comment does not offer any alternative new technology at this time. In order to accommodate the development of alternative methods or new technology for providing employee protection, the Board’s Petition process is a viable means available for consideration and in-depth evaluation of such methods and technology that may warrant rulemaking action. Board staff is of the opinion that the proposed language by PG&E does not improve upon the content, clarity or requirements of that provided in the rulemaking proposal for Section 2320.2(a)(3).

For the reasons above, the Board does not believe that further modification to the proposal is necessary as a result of this comment. The Board thanks Mr. Vocke for his comments and participation in the Board’s rulemaking process.

II. Oral Comments

Oral Comments received at the December 13, 2001 Public Hearing.

Mr. John Vocke, representing PG&E.

Comment No. 1:

PG&E believes that, as written, the proposed regulations could be interpreted to require insulated tools or insulated rubber gloves [as the only methods to provide protection required in subsection (a)(3)]. PG&E is concerned that this could limit the development of technology related to the type of electrical protection provided for employees working on energized systems. There would be costs associated with the regulation that could limit the scope of protective equipment.

Response:

See the response to Mr. Vocke's written comments Nos. 1 and 2.

Comment No. 2:

Mr. Vocke stated that the regulation adopts by reference ASTM D 120-95 which contains the standard specifications for rubber insulating gloves. PG&E believes the regulation should also reference the ASTM F 496 standard, which is the in-service testing, care, and maintenance standard for insulating gloves. The ASTM F 496 standard references the ASTM F 696 standard which states that leather protectors should be worn over insulated rubber gloves. PG&E stated that those ASTM standards should also be incorporated by reference.

Response:

Proposed Section 2320.2(a)(3)(A) requires that rubber insulating gloves meet the provisions of ASTM D 120-95, Standard Specification for Rubber Insulating Gloves. ASTM D 120-95 standard ensures that rubber insulating gloves are tested and designed to ensure electrical protection appropriate for their intended use.

The employer's Injury and Illness Prevention Program in GISO Section 3203(a)(7) requires the employer to provide training and instruction regarding the safe and appropriate use of protective equipment. Further, GISO Section 3380 (c) through (e) in relevant part require that devices and safeguards (including personal protective equipment) be used in accordance with the manufacturer's recommendations, that the equipment be maintained in a safe, sanitary condition, and be of a design, fit and durability to provide adequate protection against the hazards for which the equipment is designed. The Board staff does not believe that it is necessary to specifically incorporate by reference into the LVESO additional standards associated with the care, use and maintenance of rubber insulating gloves.

For the reasons stated above, the Board does not believe that further modification to the proposal is necessary as a result of this comment. Again, the Board thanks Mr. Vocke for his comments and participation in the Board's rulemaking process.

ADDITIONAL DOCUMENTS RELIED UPON

None.

ADDITIONAL DOCUMENTS INCORPORATED BY REFERENCE

None.

DETERMINATION OF MANDATE

This regulation does not impose a mandate on local agencies or school districts as indicated in the Initial Statement of Reasons.

ALTERNATIVES CONSIDERED

The Board invited interested persons to present statements or arguments with respect to alternatives to the proposed regulation. No alternative considered by the Board would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the adopted action.